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THE FLEET OF XERXES.¹

Two extreme views obtain as to the numbers of this fleet. Many modern writers² have unaffectedly accepted, sometimes with conviction, the 1,207 (or 1,327) triremes of Herodotus. In sharpest contrast, we have Prof. Hans Delbrück's estimate of not over 300 triremes for Xerxes' fleet at the outset, or anyhow at Artemisium.³ Delbrück discards all Herodotus' numbers as equally worthless, and sets out to deduce the true figure from criticism of the naval battles and of probabilities; it leads to the result that at Salamis the Persians were actually outnumbered, which is the point that really matters. Several intermediate views have also been put forward; Dr. H. Welzhofer⁴ and Prof. J. Beloch⁵ have taken the figure as 1,207 ships, not warships, Welzhofer putting the warships at something over 400; Prof. J. B. Bury⁶ and Dr. J. A. R. Munro⁷ have suggested 800 triremes at the outset; while Dr. E. Meyer⁸ gives 600-800 to start with, not all triremes, and 400-500 at Salamis, the fleet being brought up by transports, etc. to the popular figure of 1,000. Naturally, most of these figures are guesses from the probabilities of the case; but Dr. Munro has recognised the crucial fact of the four divisions of the fleet.

I hope it is not inconsistent to believe that Herodotus was sincerely anxious to tell the truth, and at the same time to sympathise with Delbrück's

¹ [Dr. R. W. Macan's *Herodotus, Books VII.-IX.*, was only published after this paper was already in the editors' hands. I have seen no reason to make any substantial alterations beyond the addition of a few notes, distinguished by square brackets; but I must apologise for the brief notice of Dr. Macan's theory of Salamis, a full discussion of which would occupy much space.]

² Busolt, *Gr. Gesch.* ii.² 672, n. 4, 'glaublich'; A. Hauvette, *Hérodote*, 318; Th. Nöldeke, *Aufsätze zur persischen Geschichte*, 44; A. Bauer in *Jahresh.* vol. iv. (1901), p. 94, very emphatic; Dr. G. B. Grundy, *The Great Persian War*, 219, 'no solid grounds for doubting it'; H. Raase, *Die Schlacht bei Salamis* (1904); to name only the most recent. It is

curious to see how Raase's really learned pamphlet ignores Delbrück and Meyer, and still talks of the Greeks not being heavily outnumbered at Salamis, only by some 300 ships! In fact, the authentic fleets of as many as 300 in antiquity can almost be numbered on one hand. [Dr. Macan gives 1,200, divided (arbitrarily) into three squadrons of 400 each, but suspects there may be some exaggeration.]

³ *Gesch. d. Kriegskunst*, vol. i. p. 70: cf. pp. 76, 78.

⁴ *Zur Gesch. d. Perserkriege* (*Neue Jahrbücher für Philologie und Pädagogik*, 145, 1892, p. 158).

⁵ *Griech. Gesch.* i. 368.

⁶ *Hist. of Greece*, i.² 287.

⁷ *J.H.S.* xxii. (1902), pp. 294, 300.

⁸ *Gesch. d. Alterthums*, iii. § 217.

method. On the latter point, however, one cannot help feeling that Delbrück's two chapters on the Persian fleet are among his least happy efforts. His calculations appear to be based on two assumptions: one, that Xerxes may have been ignorant of Themistocles' shipbuilding, which I find incredible; the other (implied, not expressed), that one trireme was as good as another, irrespective of nationality, which surely all naval history to date refutes. Nevertheless, it is a great thing that someone should have taken the Persian fleet seriously. As to Herodotus, granting (as everyone now grants) his sincerity, the only assumption which we require to make is that among his patchwork of sources there was at least one which did know the real strength of the Persians, surely no particular mystery. I start then from the point that, while a fleet of 1,207 triremes is (to me) incredible and absurd, still we are not justified in jettisoning all Herodotus' numbers and taking to guesswork unless and until we have made every effort to extract sense from them. As I do not like to patch the fifth-century evidence with that of the fourth,⁹ I do not propose to use Diodorus-Ephorus as argument, though I cannot help it if the argument itself brings us round to Diodorus.

This paper, by a different method from that of Delbrück, arrives at a somewhat similar result; in the main battle of Salamis, as fought, the Persians were probably outnumbered. I hope I need not apologise for the investigation of figures in §§ 1 and 8; it seems to me that one must first settle on a numerical basis (so far as possible) before one can form clear ideas about any war whatever.

§ 1.—*The Numbers.*

We possess three formal totals for the Persian fleet.

(a) 1,000, Aeschylus, *Pers.* 341–3. Some have doubted whether Aeschylus does not mean 1,207; but the messenger is surely clear enough. 'The number of ships that Xerxes led was 1,000; that I know,' *οἶδα*—a thing that could be seen, counted; 'and there were 207 surpassing swift; thus says report,' *λόγος*—a thing that could not be seen or counted, but had to be told. I take the distinction between *οἶδα* and *λόγος* to be conclusive that the 207¹⁰ were included in the 1,000, as the Schol. *ad loc.* understood.

(b) 1,207, Herod.; the number of the Persian fleet at Doriscus, without, be it noted, the ships of Abydos. The relation of this number to that of Aeschylus, and its source, will be considered later.

(c) 1,327, Herod.; the number of the Persian fleet at Therme, arrived at by adding 120 ships from 'the Hellenes of Thrace and the contiguous

⁹ I assume that Prof. U. von Wilamowitz-Moellendorff has sufficiently shown that the account of Salamis in the *Persae* of Timotheos is merely a sea-fight at large of Timotheos' own time, whatever corrections may ultimately be made in interpretation of details.

¹⁰ I do not know what this 207 means. One is familiar in the later Athenian navy with ships reckoned as first-class, *ἐξαιρητοί*; but for a fleet in large part newly built, 207 such is a highly improbable number; cf. n. 62.

islands' to 1,207. It does not appear what has happened to the ships of Abydos.

Now Herodotus has a stereotyped figure for a Persian fleet, 600; so on Darius' Scythian expedition, 4, 87; so at Lade, 6, 9; so under Datis and Artaphernes, 6, 94. This figure reappears again in the fifth-century Attidographer Phanodemus as the number of the Persian fleet at the Eurymedon.¹¹ It has often been pointed out that the Persian loss in the two storms, 400 + 200, looks like an attempt to reduce their fleet of 1,207 to 600.¹² I believe it was so meant; only it does not work, for the number before the storm was not 1,207 but 1,327. Herodotus has forgotten all about the 1,327; it is then no real number; the addition of 120 to the 1,207 is just a misunderstanding of his own, and has nothing to do with his sources. No source gave 1,327; on the contrary, his attempt to reduce 1,207 to 600 shows that *these* are the two numbers between which he has got confused, and that the extra 120 has nothing to do with the case at all. If so, there was a second source, or group of sources, that gave Xerxes not 1,207 ships but 600. From the fleet of Xerxes this number 600 became transferred to other and less famous Persian fleets.

We can now begin from the two points fixed by Herodotus. The first is that the Persian fleet which was at Doriscus was commanded by four admirals; it was therefore in four divisions;¹³ for there is no hint of the four admirals being other than equal in authority. Two of the admirals were sons of Darius; of these, Ariabignes commanded the Ionians and Carians, Achaemenes the Egyptians. The other two, Megabazos and Prexaspes,¹⁴ men otherwise unknown, commanded 'the rest.' That is to say, on Herodotus' figures the two brothers of Xerxes commanded 370 ships, the two commoners 837; a sufficient absurdity. But the commands of Ariabignes and Achaemenes give the other fixed point; the divisions were *territorial*. Now it is obvious that, on any territorial arrangement, the third admiral must have commanded the Phoenicians; that they were the most important part of the

¹¹ Plut. *Cimon*, 12.

¹² Several writers—e.g. Busolt, ii.² 694, n. 6; Welzhofer, *Die Seeschlacht bei Salamis* (*Hist. Taschenbuch*, 1892, p. 48); Meyer, *G. d. A.* iii. § 217; Munro, *l.c.* p. 299; C. F. Lehmann-Haupt, *Klio*, vol. ii. (1892), p. 338, n. 2; [and Macan on H. 8, 66]—accuse Herodotus of raising his figure for the fleet again after the storm to its original strength by supposing that reinforcements from the islands, etc., balanced the losses. Fortunately, he never said anything so foolish. What he does say (8, 66) is that Xerxes' *men*, both those that marched overland and those who came on shipboard, were as numerous at Phalerum as before Thermopylae; for the losses of *men* in the storms, at Artemisium, and at Thermopylae, were balanced by reinforcements. There is not a word about *ships*. The Boeotians turned out πανστρατιῇ, except the men of

Plataea and Thespieae; if we reckon them at 8,000–10,000, the latter being one half of their total levy at Delium (see Beloch, *Griech. Aufgebote* ii. in *Klio*, vi. 1906, p. 35), and add another 2,000 for the Malians, Dorians, Locrians, and islanders, then H.'s statement is sobriety itself, provided that (as regards the fleet) he is reckoning the loss in fighting men only and not in rowers, i.e. the loss as it affected the Persian army, of which the Persian marines formed part.

¹³ Aeschylus gives as total 1,000 ships, and later on a division of 250 (*Pers.* 323); it looks as if we had another allusion here to the four divisions.

¹⁴ If Megabazos' father be the Megabates of H. 5, 32, he was a collateral of the royal house. It does not appear if Prexaspes was related to the well-known Prexaspes of Cambyses' reign.

fleet qualitatively is clear on every page of the story,¹⁵ a point Herodotus naïvely brings out by giving them the largest contingent of any people. This leaves for the fourth admiral two separate groups of ships, separated by the Iono-Carian group, viz.: (1) those of Cyprus, Cilicia, Pamphylia, Lycia, 330, and (2) those of Aeolis and the Hellespont, 160. That one admiral commanded both groups is, on a territorial arrangement, out of the question. The total Persian fleet therefore was not in four divisions but in five, viz.: (1) Egypt; (2) Phoenicia; (3) Cyprus, Cilicia, Pamphylia, Lycia; (4) Ionia and Caria, including of course the 'Dorians of Asia'; (5) Aeolis and the Hellespont, or rather everything north of the northern boundary of the Ionian fleet, whatever that was. I shall refer to each of the five groups as 'fleets,' and shall call (3), (4), and (5) the central, Ionian, and northern fleets respectively. Probably each of the five was in fact a separate fleet with a separate organisation. Herodotus' national numbers are worthless, as often noticed.¹⁶

There were only four fleets at Doriscus. The fifth then, if employed at all, joined after the expedition left Doriscus. Now Herodotus says that the ships of Abydos were not at Doriscus, they were guarding the bridges. The only object of this was in case a Greek flying squadron should appear; and in that event the ships of Abydos *alone* would have been of little use. The fleet then that was not at Doriscus was the northern fleet, left to guard the bridges, its own waters. Now Herodotus says that Xerxes was joined later by those 120 ships from 'the Hellenes of Thrace and the contiguous islands.' Everyone has seen that these had not the remotest chance of supplying 120 ships, if indeed they could supply any at all.¹⁷ We have seen too that these ships were some sort of a misunderstanding on the part of Herodotus, which he promptly forgets all about again, when reducing the 1,207 of his first source to the 600 of his second. This 120 then does not come from the same source as the 1,207, *i.e.* from the source which exaggerates; and it may therefore be a correct figure. There is only one thing that it can represent; it is meant for the northern fleet, which (and which alone) joined Xerxes after he had left Doriscus,¹⁸ no doubt picking up on the way its contingents, if any, from towns west of Doriscus. The name of its admiral is unknown.

¹⁵ One of one's difficulties is the constant use of 'Phoenician' for a Persian fleet generally. See, *e.g.*, for Herodotus, the proceedings of that fleet after Lade; for Thucydides, 1, 100 (the Eurymedon campaign).

¹⁶ The total of the Ionian and northern fleets is 360, *i.e.* the 353 of Lade in round figures. Most of the exaggeration falls on the (less known) Asiatic contingents. [Dr. Macan treats H.'s navy-list as substantially correct, but has no new reasons.]

¹⁷ Hauvette, *Hérodote* 314, justly points out that the expense of provisioning the army must have precluded the towns of Thrace and Chalcidice from doing much else. They also furnished land troops.

¹⁸ Diodorus has an extraordinary figure here. His total for the first four fleets corresponds with that of Herodotus, though he makes the Ionian fleet 20 larger, the central 20 smaller, than does the latter. But Aeolis and the Hellespont do not correspond; H. gives 160 for the two, Diodorus 120. D. then tacks the surplus on to the islands. I draw no deductions from this: but see § 9. I see, however, little to warrant the conjecture of A. von Meiss, *Untersuchungen über Ephoros* (Rhein. Mus. 1906, vol. 61, pp. 360, 399), that Ephorus here used, in addition to Herodotus, a (supposed) navy list of Ctesias giving a total of 1,000 ships, and consequently smaller separate contingents. See also n. 117.

Now if we have five territorial fleets, which in Herodotus' second source total 600; and if one of these fleets is 120 strong, a number which at any rate does not come from the first source; then the second source probably presupposed the following: the Persian fleet was organised in five fleets of 120 ships each, totalling 600. I think we shall see every reason for believing this to be correct. 600 would be the *paper* strength on a general mobilisation; but in 480 B.C., if ever, the fleets were at paper strength. A fleet of 600 triremes would, I suppose, be quite unmanageable in fact;¹⁹ but five separate fleets of 120 each would not.

§ 2.—*The Composition of the Fleets.*

Before proceeding to examine Herodotus' record in the light of the above supposition, it may be useful to analyse the composition of the fleets a little further.

The sea-coast of the Persian empire was not all acquired in one way. Egypt, Ionia, Caria, were conquered by force. Cilicia treated with Cyrus as an independent state, and came in on favourable terms at a time when Syennesis' co-operation was vital.²⁰ Phoenicia also came in of her own free will; on what terms we do not know, but the acquisition of the Phoenician fleet without fighting for it was so tremendous a gain to Persia that the terms for Phoenicia must have been good ones. It is probable enough that both Phoenicia and Cilicia would bargain for a fixed limit to their military (or rather naval) service. Now Herodotus says (3, 19) of Cambyses *πᾶς ἐκ Φοινίκων ἤρτητο ὁ ναυτικὸς στρατός*: all his navy depended on, or 'was hung upon,' the Phoenicians. This does not mean that he had only Phoenician ships: he had Cilician, Cyprian (3, 19), and Ionian as well. It means that the Phoenicians were the principal part of the organisation: that the rest were organised round or upon them. If then Xerxes' navy was organised in fleets of 120, and organised upon the Phoenicians, the number would seem to be due to this, that 120 was the agreed limit of Phoenician naval service. I shall return to the question of why 120 (§ 8). The actual organisation of the fleet as it appears under Xerxes must be due to Darius, and be connected with his general organisation of the empire, involving doubtless the abolition of the old 'sea-province' of Cyrus.²¹

¹⁹ No other power in antiquity ever collected a fleet of 600 warships. Octavian may have controlled 500, partly borrowed from Antony, and organised as two distinct fleets in different seas, at the beginning of the campaign which ended with Naupactos. In that year, 36 B.C., there were about 1,000 ships in commission in the whole Mediterranean. In 480, apart from the Greek and Persian fleets, totalling together almost 1,000, we have those of Corcyra, Carthage, Syracuse, Etruria, Marseilles. If we take Kromayer's view, that in

the civil wars the fleets, reckoning in quinqueremes and Liburnians, came out at about the average power of a fleet of triremes of the same total, we must rank the total sea-power of the early part of the fifth century extraordinarily high. It seems possible, however, that the zenith of Mediterranean sea-power would have to be placed about 260-250 B.C.

²⁰ See J. V. Prášek, *Gesch. der Meder und Perser*, i. 215.

²¹ See Prášek, *op. cit.* 223, 239. If the Phoenician terms were as I suggest, 120 pen-

Now if the Phoenicians were the kernel of the fleet, and its best material,²² why (allowing that Achaemenes of necessity commanded the ships of his satrapy²³) did Xerxes' other brother Ariabignes command the Ionians, while the Phoenicians were under an admiral of less importance? The answer is not difficult. The real admiral of the Phoenicians was the King himself. Xerxes, while commander-in-chief of the whole fleet,²⁴ was in particular admiral of the Phoenicians, precisely as a modern admiral in command of a fleet will in particular command the battleship squadron. With the Phoenician fleet was Xerxes' own flagship, the Sidonian galley on which he embarked to review the fleet at Doriscus, and to see Tempe, and on which, says Herodotus (7, 128), he always did embark; and his pleasure when the Sidonians won the race at the regatta (5, 44), otherwise meaningless, becomes natural enough when we realise that they were his own personal command. But as his duties with the land army, the superior service throughout antiquity, prevented him from actually sailing with his fleet, the Phoenicians were in fact under the orders of one who, in theory, can only have been Xerxes' second in command in the Phoenician fleet; while to the Ionians was given a commander of the highest possible consequence, in view of the jealousy between their fleet and the Phoenician which appears so clearly at Salamis.²⁵

The Persian admirals were not really admirals, as we understand it. They were generals of marines, *οἱ τοῦ ναυτικοῦ στρατοῦ στρατηγοί*, commanding the land troops on board; a fact which comes out most clearly at Mycale (§ 6). An ancient sea-fight took a double form, according as whether the ship herself, or her epibatae, were for the moment the weapon in use. As regards the ship herself, Artemisia (H. 8, 67) expressed a candid but rash opinion that the central and Egyptian fleets were of no use, a remark

tekontors must have been the force contemplated. Doubtless the extension of the meaning of these terms, however worded, so as to apply to triremes, would be one of those measures of reorganisation which earned for Darius his nickname *δ κἀπηλος*. We can see that the division between the northern and Ionian fleets must correspond to that between the satrapies of Daskyleion and Sardis, whatever it was.

²² That the Greeks dedicated Phoenician triremes after Salamis is conclusive as to *their* opinion.

²³ I mean, if he had a military command at all. (Egypt sent no land troops.) I am not expressing an opinion on the controversy whether, in the ordinary way, the satraps had the military command.

²⁴ The Greeks of a later time were much perplexed over the Persian command, and felt it necessary to manufacture a single admiral for the fleet; so Megabates (Diod. 11, 12), perhaps meant for the father of Megabazos; and Plu-

tarch's Ariamenes (*Them.* 14), who appears to be a conflation of Ariabignes and Achaemenes. See on these names Marquart, *Untersuchungen zur Gesch. von Iran* (*Philol.* 54), 499-502. It is hardly worth mentioning that Ctesias has the same error.

²⁵ A fine field for speculation can be opened up if one treats the jealousy as really existing between Phoenicians and *Carians*, and going back to the 'dark ages' when they may have fought over the relics of Minoan sea-power. We find the Phoenician circumnavigation of Africa matched by that of Western Asia under the Carian Skylax; and now we have another Carian, Heraclides of Mylasa (see § 4), teaching men how to meet the Phoenician dieplus. Naturally, the duel between Phoenicia and Themistocles ended in the latter acquiring a Carian mother (Plut. *Them.* 1); and there may be a lot of other material of the sort to be collected. Doubtless the Phoenician version of Salamis dealt very faithfully with the Croto-Carian Artemisia.

perhaps reflecting the temper of the Ionian fleet, which no doubt thought itself as good as the Phoenician.' As to the Egyptian fleet, prior to the Ionian revolt, we know that Apries fought with the Tyrians and that Amasis conquered Cyprus; but we do not know how far their fleets were manned by mercenaries. Of the central fleet, we only know that the Lycians, centuries before, had had a fine reputation as 'pirates,'²⁶ and that the Cilicians were, at a later date, to astonish Rome with what they could do in that line; while the Cypriotes were either Phoenician or Greek, good fighting stock. And, after all, the Phoenician reputation itself, prior to the fifth century, has to be taken on trust. We may suppose that the ships of the central and Egyptian fleets were not quite up to the standard of the other two; further than this we need hardly go. As to epibatae, all the fleets but the Egyptian carried, either solely or principally, Persians, Medes, and Sacae, and were therefore on a level.²⁷ The Egyptian carried, either solely or principally, native marines, hardly perhaps of Persian fighting quality, but with the great advantage of a heavy armament. If we reckon Caria with the Greeks, then as regards rowers two of the fleets were Greek, two Asiatic, one (the central) thoroughly mixed. The strength of the fleet lay in speed,²⁸ seamanship, and courage; its weakness, in the divided command and in the root fact that the bow had no chance against the spear

²⁶ Mr. H. R. Hall, *The Oldest Civilisation of Greece*, 88; Prof. F. Hommel, *Grundriss d. Geog. u. Gesch. d. alten Orients*, i. 57, 58.

²⁷ [As Dr. Macan thinks there were native epibatae throughout the fleet, I must give my reasons for this statement. The navy-list (7, 96) says that all the marines were Persians, Medes and Sacae. Persian epibatae on a Sidonian ship (7, 181 compared with 8, 92). This is again borne out by 8, 130; see p. 226 *post*. But 7, 184 (the chapter of the great exaggerations) refers to native as well as Persian, etc. epibatae. One might discard this as an obvious means of working up a large figure; but we hear of Egyptian epibatae (9, 32), heavy-armed troops (7, 89). To my mind, two sets of epibatae on one ship are impossible; the ships of this epoch did not carry, probably could not carry, many epibatae. I can only conclude that four fleets carried Persians, etc., and the Egyptian fleet natives. I do not say that the four fleets carried no native epibatae; but if they did, these were few and unimportant. On the contrary, the Egyptian marines were a substantial body, or Mardonius would hardly have landed them: *ergo*, there can have been little or no room for Persian marines in the Egyptian fleet. It will be seen, I hope, that this fits the story extremely well.] Now thirty epibatae to each trireme is too high. Meyer properly cuts down the rowers to 150, and twenty is ample

for the epibatae; the Greek ships, if we like to follow Plutarch, carried eighteen, but the regular Athenian number later was ten. Four hundred and eighty ships at twenty epibatae each = 9,600 men, or with officers say a round 10,000. I cannot help suspecting that the total Persian army on mobilisation was not 360,000 in six corps of 60,000, but 60,000 in six corps of 10,000, one complete corps being assigned to the fleet. [Dr. Macan does not see why H. should give the armament of each of the nations that contributed to the fleet unless they sent epibatae. But on the analogy of any other fleet, e.g. the Roman, the rowers must have had their arms with them; and this is expressly stated of the Samians, 9, 99.]

²⁸ H. 8, 10. The Greek ships were heavy by comparison, 8, 60. Plutarch (*Them.* 14) says the Persian ships were tall, with lofty poops, compared with the Greek ships, which were much lower in the water. It is a pity that theories have been built on this, for it is mere moralising, like his similar statement about Actium; the just cause must have the smaller ships. The galleys on the fourth-century coins of Sidon and Aradus are not in the least like Plutarch's description; and his reference to Ariamenes fighting *ἄνω καὶ ταχέως* shows that what he has in his mind is not the fifth century at all, but the *ταχυμαχία* of the first century.

except under its own conditions. It was therefore vital for the fleet to have plenty of sea-room and never to be compelled to close against its will (H. 8, 60), to have free play for the archer and the ram; unluckily for itself, it was to meet an antagonist of genius who soon mastered this fact.

The ships were all triremes. Aeschylus in 472 B.C. could never have made the Persians wail for the three-tholed ships that had betrayed them, *τρίσκαλμοι νᾶες ἄναες*, had it been otherwise. Now the ships lost by Mardonius at Athos in 492 were all or chiefly pentekontors, as is shown by H. reckoning seventy men lost to each, his reckoning elsewhere for a pentekontor being eighty (7, 184). No doubt there were some triremes before 480, but not many: the point of Darius' preparations for three years was, that he was 'scrapping' his pentekontors and building triremes. The pentekontors, with a few old triremes, were utilised for the bridges over the Hellespont; chiefly the former, as Herodotus talks of the gaps left in 'the pentekontors.'²⁹ One of the really noteworthy points is that triremes did the scouting for both sides, as appears by the engagement of scouts off the Magnesian coast. The Persians therefore had no light craft, and certainly they had no pentekontors, for the bridges must have absorbed every pentekontor in Asia. The 3,000 'triakontors, pentekontors, cercuri, and horse transports' of Herodotus 7, 97, which by 7, 184 have grown to 3,000 pentekontors, with crews calculated accordingly, are all a mere legend, sprung no doubt from the supply ships.

No figures in antiquity are so hard to check as those of naval transport or supply. Fortunately we possess trustworthy figures for one well-equipped fifth-century expedition, the first Athenian to Syracuse; and they come out at about one supply or service vessel to each warship.³⁰ I do not see how one is to give to the finely-equipped fleet of Xerxes less than one supply vessel to every two triremes, perhaps rather more. In this case we at once get the popular or Aeschylean total of 1,000 for the whole armada.³¹

In conclusion, I note two detailed figures. (1) Paphos sent twelve ships. If this is correct, Cyprus sent a good half of the central fleet. This may be right; for the Cilician contribution must have been, for the reasons given above, a small one, and, to judge by the coinage, Pamphylia can only have had two towns important enough to send ships, Aspendus and Side. Phaselis in Lycia may have sent a substantial contingent, from the galley on its coins and Lycia's old reputation for piracy. (2) Artemisia brought five ships. This startling figure is given as the contingent, not only of Halicarnassus, but of the important islands of Cos and Calymna, which were wealthy enough.³² It appears to me to preclude absolutely any higher figures

²⁹ [Macan reads τῶν πεντηκοντέρων καὶ τριηρέων, but this last word is merely an emendation. It is not very material.]

³⁰ Thuc. 6, 42; 134 triremes and two pentekontors to 131 supply and service ships; many volunteer merchantmen also accompanied the fleet for the sake of trading. This last may

be true of Xerxes' fleet also.

³¹ If we like to assign eighty to each fleet, we get, not only Aeschylus' 1,000, but the 200 ships per squadron so common in H. and later writers.

³² *B.M.C. Caria*, Introduction.

than those which I have taken for the fleet. That Halicarnassus, Cos, Calymna, and Nisyros could have sent more than five ships seems clear; and probably Ionia and Caria, even allowing for damage done in the Ionian revolt, could have sent more than 120: this seems to bear out what is above stated, that there was a limit depending on something else, *i.e.* Phoenicia.

§ 3.—*The Storm.*

I will now briefly go through the story of the expedition after it left Doriscus.

At Therme (7, 124) the marines were camped 'by the Axios, at Therme, and at the cities between;' the fleets were therefore at separate stations, and moving independently. After leaving Therme, the story goes that the whole fleet sailed from Therme to the strand 'which is between the city Casthanaea and C. Sepias' (Dr. Grundy calls it 120 miles), in one day; the strand not being large, they anchored in eight lines; in the storm ships were wrecked, some at Ipni in Pelion, some on the strand, some on C. Sepias, some at the city Meliboea, some at Casthanaea. After the storm the Greeks capture fifteen ships under Sandoces. The Phoenician, Egyptian, Ionian, and central fleets all appear again in the story; of the northern fleet we hear no more. These are the main points; and I cannot find that the story told in H. 7, 188-195 has ever been properly analysed.

The first thing necessary is to get some clear idea of that part of the coast-line³³ which stretches from the mouth of the Peneus to Kato Georgi (commonly called C. Sepias) opposite Skiathos, and which is roughly divided into three sections by the capes of Kissabo (Ossa) and Pori (Pelion). Meliboea is Thanātu; epigraphic evidence fortunately renders this certain. According to the Admiralty chart (No. 1,085) there is a long stretch of beach here. Casthanaea was 'identified' by Mr. H. F. Tozer³⁴ and Georgiades³⁵ with some ruins on the cliffs below Keramidhi; but Georgiades adduces no evidence beyond that of Herodotus, while the reason which Tozer gives, *viz.* that Casthanaea is 'the only town besides Meliboea mentioned by Strabo as being on this side of Pelion,' is a mistake; Strabo merely says that Casthanaea was 'under Pelion,'³⁶ and it may just as well be Zagora,³⁷ or

³³ Of the ancient writers, Strabo 9, 443 is best, though he complains that he could not get information. The modern authorities are given by Mr. A. J. B. Wace in *J.H.S.* 26 (1906), p. 143, *The Topography of Pelion and Magnesia*; and I am much indebted to him for further information as to this coast-line, and some references, which he most kindly sent me in reply to some questions. The accompanying map has been drawn by Mr. F. Anderson from Admiralty chart no. 1,085, reduced to $\frac{1}{4}$ scale, with some alterations in the way of names for which I am responsible. It has not been

possible on the reduced scale to indicate the little beaches in the manner done in the chart itself.

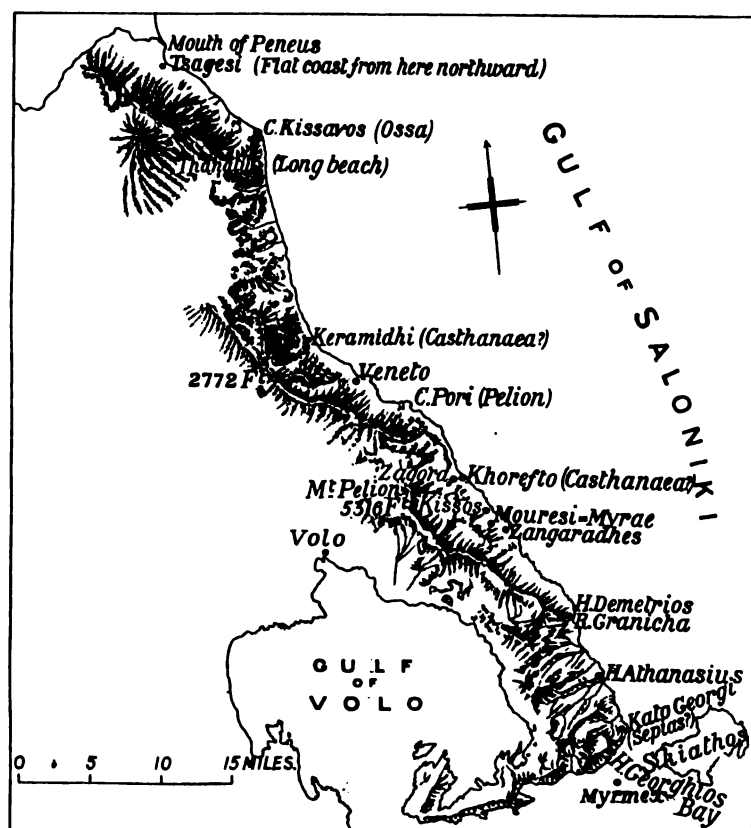
³⁴ *Researches in the Highlands of Turkey*, ii. 104.

³⁵ Θεσσαλία, first edition (1880), pp. 213, 218. I regret that I have been unable to see the second edition, so my quotations must stand subject to correction.

³⁶ Κασθαναίας κώμης ὑπὸ τοῦ Πηλίου κειμένης.

³⁷ Mr. Tozer states that the learned men of Zagora claimed that that place was Casthanaea, and supported their claim 'by the abundance

even the port of the latter, Khorefto, which is the only village now actually on the shore, south of Tsagesi. As Zagora, according to the Admiralty chart, lies right under the highest point of Pelion, 5,316 feet, while Keramidhi is far to the north under outlying spurs of the mountain, none of which are over 2,772 feet, it seems obvious that Zagora best suits Strabo's description: but the actual position of Casthanæa can only be settled by epigraphic evidence. As to C. Sepias, the ordinary view is that it was the heel of Magnesia, Kato Georgi, opposite Skiathos. Mr. Wace has attempted



to show that it was C. Pori, but I cannot feel convinced by his arguments;³⁸ I will, however, consider both alternatives.

of chestnut trees in that neighbourhood, while there are none near Keramidhi.' According to Georgiades, Zagora is the most important place in the neighbourhood.

³⁸ *J.H.S.* 26, 146. If C. Sepias had been Kato Georgi, why did not the Persians put to sea and run round the corner, out of the wind? I fancy that with a gale blowing on shore this

would be easier said than done with galleys; however, I hope this paper will answer the question; the fleets were strung out in detachments at least as far north as Thanātu (Meliboea). This leaves only a passage from Apollonius Rhodius, an unsatisfactory passage (see Georgiades) in an unsatisfactory geographer, and it is only a deduction at that. The

Now as to the strand where the Persian fleet is said to have anchored before the storm.

If Casthanaea be Keramidhi and C. Sepias be C. Pori, we have between the two a coast of rugged cliffs, where no strand is or ever could have been,³⁹ and the whole story of this strand is a myth.

If, however, Casthanaea be either Keramidhi or else Zagora (or Khorefto) and C. Sepias be Kato Georgi, the Admiralty chart shows a beach at Khorefto, a place which Mr. Wace tells me does a good trade; but from the chart this beach cannot be very large, and, moreover, can hardly be described as *between* Casthanaea and C. Sepias, if (as I suppose) Casthanaea be Zagora or Khorefto. Going down the coast, we find a small beach at the Granicha river, and a bay at H. Athanasius. Mr. Wace tells me that the latter, which he has visited, would not, he thinks, hold more than seventy-five large caiques with comfort; and that the Granicha beach looks no bigger; that there is a small sandy beach at H. Georghios (round the corner from the cape), used by sponge fishers, and a small harbour below Zangaradhes called *Καραβοστασία*. Georgiades mentions another little harbour at Kissos.

This then is a coast of rocks and cliffs from Keramidhi to Kato Georgi, broken here and there by a small beach or a small anchorage. There is no locality that can represent a strand at which the whole Persian fleet can have anchored.⁴⁰ Mr. Wace tells me that the sea has gained on the land at Kato Georgi and is thought to have done so at Keramidhi; and it is, I suppose, just conceivable that 2,000 years ago there may have been a large beach, now submerged; but nothing probably could determine this except a geological survey expressly made with this object in view, and it is clear that, having regard to the nature of the coast, the burden of proof would be on anyone who should assert that the 'Sepiad strand' ever existed.

The topography then lends no support to Herodotus' narrative.

We can now, however, see that that writer's account combines two irreconcilable stories; stories, I may add, that would be equally irreconcilable were the 'strand' located somewhere under water to-morrow. One is that, when the storm broke, the Persian fleet as a whole was huddled together

natural view is certainly that of Bursian, *Geog. von Griechenland* i. 99; C. Pori is Strabo's *Ἰπνί*, τόπον τραχὺν τῶν περὶ τὸ Πήλιον. If we make Pori, Sepias, and *Ἰπνί*, Venéto (Georgiades), then the heel of Magnesia is left nameless both by H. and Strabo, which seems unlikely. Mr. Wace proposes Myrae; but surely Mézières' identification of Myrae with Mouresi is, in the absence of inscriptions, sufficiently probable.

³⁹ Mr. Wace states (*l.c.* 147) that north of Kato Georgi at least as far as Zagora there is no beach at all to accommodate a fleet, and uses this as an argument for Sepias being C. Pori. But, whereas there are *some* little beaches south of C. Pori, there is absolutely nothing between

C. Pori and Keramidhi (see Bursian, *l.c.* i. 99); so the argument is at least double-edged. It will be seen that Mr. Wace's premises, which I fully accept, seem to me to necessitate a very different conclusion.

⁴⁰ I did not know when I came to this conclusion that Georgiades (*l.c.* p. 213) had said the same thing twenty-eight years ago. He thought that the Persian fleet was strung out at all the little harbours below Zagora, Kissos, etc. It is strange that no one has followed up this very just conclusion. [Dr. Macan says that the ἀγιάλας is defined in H. 7, 188, 2 as 'extending from Kasthanaia to Sepias.' Can μεταξὺ bear this meaning? Anyhow the ἀγιάλας is conceived as small, 7, 188, 5 and 15.]

πρόκροσαι⁴¹ close inshore, a position in which a N.E. gale *must* have sent every ship that got wrecked straight on to the beach. But then follows the statement that wrecks came ashore at a number of places from Meliboea to C. Sepias, two of which, at least (Meliboea and Casthanaea), were N.N.W. of the supposed 'strand' on any theory, and Meliboea perhaps some considerable distance N.N.W. A N.E. gale cannot carry wreckage in a N.N.W. direction; even Boreas the Preserver could not blow both ways at once. Of these two conflicting accounts, the second implies, either that a fleet was wrecked out at sea, or that different detachments were wrecked in different places, or both.

I take it to be clear that the Persian fleet did not all sail together as a whole.⁴² The five fleets sailed separately, at least, with scouts thrown out far in front; possibly the supply ships were all under convoy of the rearmost divisions; but more probably with their own fleets. Whether therefore the storm broke on them afloat or ashore, I regard it as pretty certain that they were caught in different places. The storm got up in the *morning*, after giving the usual warning, which doubtless plenty of the sea-captains understood.⁴³ The triremes would be got ashore wherever they were at anchor, strung out along the little beaches, at Khorefto, at Meliboea; possibly many were not yet past the flat coast at the mouth of the Peneus. But in the absence of harbours the supply ships must have suffered; and their wrecks came ashore at a number of different places. All this is quite consistent.

To turn now to the other story. It is simply a poetical invention. The fleet together moves from Therme to somewhere near C. Sepias in one day (7, 183), perhaps 120 miles. Dr. Grundy has defended this; but it seems a wild impossibility.⁴⁴ To credit it would amount to believing that,

⁴¹ Aristarchus ad *Il.* Ξ 84 explains this as κλιμακῶδην γενεωλκημένοι, ὥστε θεατροειδὲς φαίνεσθαι, which Dr. Leaf explains as *en échelon*, each projecting somewhat beyond the other, like the steps of a staircase. I take this to mean that, in Aristarchus' opinion, the sterns of row two would be between the prows of row one, and so on, to save as much space as possible. Homer is certainly describing some method of getting more ships ashore than the shore would hold in the ordinary way, as the context shows. This too seems what Hesychius means by ἐπ' ἀλλήλοις. Stein, however (*H.* 7, 188), explains πρόκροσαι as parallel files of ships, eight deep, each file perpendicular to the line of coast. I prefer Aristarchus myself, as Stein's explanation would hardly increase the number of ships ashore; but if I am right in what follows, it is not very material.

⁴² This follows from their dispositions at Therme. But even the first Athenian expedition to Syracuse, 136 warships and about as many supply ships, sailed in three separate divisions.

⁴³ Herod. 7, 188, ἐξ αἰθρίας τε καὶ νημερίας τῆς θαλάσσης ζέσεως: *Medit. Pilot*, vol. 4, 1900, under 'winds'; the north wind blows with much force, even in summer. Summer gales are almost always preceded by calms with a dark appearance round the horizon.

⁴⁴ *Great Pers. War.* p. 327, n. We have little real evidence of the pace of triremes: and even so, single ship voyages are no evidence for a fleet, tied to its slowest member, and moving at an economical rate, *i.e.* using its rowers in relays of one-third at a time. Bauer has frequently and justly pointed this out. We rarely know the conditions of any recorded voyage, or even if the sails were being used. A lot of such evidence as exists is given by Droysen in Hermann's *Lehrbuch*, ii.³ 2, 302; the best is Xen. *Hell.* i. 1, 18 (on which Bauer relies in his account of Salamis), Alcibiades with eighty-six ships, going fifty kilom., takes all night in late autumn and up to ἄριστον, some eighteen hours. Xenophon was at least a practical man, who knew what a trireme meant. In allowing for twelve hours' rowing, we must

through a long summer day, a fleet of triremes, lame ducks and all, could, at their 'economical rate,' maintain some ten miles an hour, that is, pretty nearly the economical rate of a fleet of modern battleships. Three days would be nearer the mark; it may be here that the difference of two days between the journals of Artemisium and Thermopylac comes in. If only one day really elapsed before the storm, then the bulk of the fleet was certainly not south of Meliboea.

Next, the fleet arrived at a beach too small for it. What does a fleet do when it gets to a beach too small for it? The author (I do not mean Herodotus) does not know; he therefore turns to the fountain-head of all wisdom, and finds in *Il.* Ξ 34⁴⁵ that the Greeks in a similar predicament drew their fleet ashore in an arrangement called *πρόκροσσαι*, while under the sterns of the row furthest inland they built a wall because of the Trojans. Our poet, however, must needs improve on Homer; he makes the Persian fleet *anchor* in the formation called *πρόκροσσαι*, an impossible feat if Aristarchus' explanation of the word be correct, and I doubt if Stein makes things much better; one need scarcely remark that ships at anchor in line, triremes or other, must have room to swing and room to turn. Our poet has not troubled about this. The eight rows might perhaps show that he has some idea of four fleets or divisions, each in double line; but he does not reflect, when he comes to the storm, that a line of (say) sixty triremes at anchor off a beach implies a length of beach that would suffice for several times that number of ships in a line ashore, with their oars unshipped.

Lastly, as Homer has a wall, he must have a wall; and the crews accordingly (7, 191), *ex hypothesi* a great many thousand men, all armed, build a *ἔρκος*⁴⁶ of wreckage to keep off—whom? Shall we say with our poet, the (medising) Thessalians? or a few 'wreckers' from some village on the hills?

All that we know then for certain is that a storm, big or little, broke on the fleets strung out; and that we hear no more of the northern fleet.⁴⁷ *Ergo*, the northern fleet was at sea, and perished. And if so, it was the northern fleet that was sent round Euboea.⁴⁸ I need not attempt to add to the

remember that much time would be lost over launching the fleet, dinner, anchoring, or drawing ashore again.

⁴⁵ Stein justly remarks, 'Die ganze Stelle ist unter dem Vorbilde von *Il.* ξ 33 ff. geschrieben,' but unfortunately goes on to say that *Il.* interprets Homer.

⁴⁶ Welzhofer, *Neue Jahrb. f. Phil. und Päd.*, 145, p. 660, rightly discredits this *ἔρκος*. Is it perhaps a real reminiscence of using wreckage to make a breakwater?

⁴⁷ Themistocles' explicit appeal to the Ionians and Carians (8, 19 and 22) quite precludes the idea that any other large body of Greeks was still with the fleet. Neither is it possible that the northern fleet never sailed at all, but

remained at the Hellespont; the story presupposes that the bridges were *not* guarded, and it does not appear (as it would have to) either at Mycale (where the number of Persian *στρατηγοί* is conclusive: see *post*) or after. Neither can it be hidden under the term 'Ionians'; for elsewhere *H.* is precise: 4, 89, the Scythian expedition, *τὸ ναυτικὸν ἦγον Ἴωνές τε καὶ Αἰολέες καὶ Ἑλληνόπνυτοι*; 6, 98, *Datis to Eretria ἀγόμενος καὶ Ἴωνας καὶ Αἰολέας*.

⁴⁸ It is certain that the Persians, after elaborately organising their fleet, would not proceed to disorganise it by picking out the ships to go round Euboea 'from all the ships' (8, 7). A definite squadron, accustomed to work together,

reasons given by Prof. Bury,⁴⁰ which I fully accept, for sending off these ships from somewhere north of Skiathos. Whether they were all wrecked in the first storm,⁵⁰ or whether some got round, rallied in the Hollows, and were wrecked in a new storm from the S.W., is a matter on which, as Meyer says, certainly cannot be attained. They never appear again.

Herodotus says that he knew several versions of the Persian losses in the storm, the smallest making it 400 apart from the 200 ships sent round Euboea. Fortunately he has preserved indications of a very different story. In this, the Persians after the storm merely launched 'the ships' (7, 193), not, as we should expect, the remnants of them; and the Greeks, who had expected (7, 192) to find the Persian fleet sadly diminished, are amazed when they see what good plight the barbarians are really in.⁵¹ There is no trace at Artemisium of the Persians being either disorganised or demoralised, and they had no time to put things right. We have got to suppose that the loss, apart from the northern fleet, was small, and fell chiefly on the supply vessels; but there was *some* loss of triremes, as shown by the Persians 'numbering' their fleet at Aphetæ.

We may assign the heavy storm-loss with confidence to the same poetical source that we have already commented on; and I have no hesitation in also ascribing to the same source the loss of eleven out of twelve Paphian ships in 7, 195, which must belong to a version that gave a very heavy storm-loss. The question of the fifteen ships under Sandoces, hyparch of Cyme (7, 194), is more difficult. τῶν ἐστρατήγεε Σανδώκης, says Herodotus. Elsewhere he keeps the term στρατηγός for the admirals. I lay no stress on this; but even if we suppose that Cyme was included in the Ionian and not in the northern fleet, and that consequently it is conceivable that Sandoces had under his orders a dynast of Caria (Aridolis), it is absolutely impossible on any ground that he can have commanded a dynast from Paphos in Cyprus. We might suppose that these were storm-tossed ships, separated from their fleets, of which Sandoces had *de facto* taken command; but with a N.E. gale, blowing *on shore*, this is impossible. Neither is it likely that the main fleet, with the Greeks so close, would have left Sandoces to collect along the coast and bring in any ships left behind to repair slight damages, which would be making a present of them to the Greeks. A ship of Cyme too should have been with the

was sent. It meant something, I suppose, even to bring 120 ships to anchor without collisions: see Thuc. 6, 42 on the anchor drill of the Athenians before sailing for Syracuse, ξύνταξιν ὥσπερ ἐμελλον ὀρμεισθαι . . . οἱ στρατηγοὶ ἐποίησαντο.

⁴⁰ B.S.A. ii. 83. In his history, Prof. Bury sends these ships off from Aphetæ. Has he abandoned his earlier view [which Dr. Macan has adopted]?

⁵⁰ Bury in B.S.A. ii. and Munro, *l.c.* p. 810. Note that in 8, 66 H. knows only of 'the storm'; he must have had two versions at least before him. D. Mülder, *Klio*, vol. 7

(1907), 29, treats the whole storm-incident as a duplicate of the storm that destroyed Mardonius' ships at Athos in 492. If I am right about the fleets, this is impossible. I note that the Mediterranean Pilot, in its Athens table (the nearest), gives an average of three days' gale for August, more than for any month but January and February. [Dr. Macan treats the two storms as certainly one, lasting for three days.]

⁵¹ H. 8, 4: ἐπεὶ αὐτοῖσι παρὰ δόξαν τὰ πρήγματα τῶν βαρβάρων ἀπέβαινε ἢ ὥς αὐτοὶ κατεδόκειον.

northern fleet; though it is always possible that one or two stragglers from that fleet got back [or that (as Dr. Macan suggests) Sandoces was not on a ship of Cyme at all]. Possibly the Greeks captured fifteen ships somehow; but the details I look on as quite untrustworthy, and as belonging to the same source as the loss of the eleven Paphian vessels.

The fleet was 'numbered' at Aphetæ, which I take to mean that the ships from the islands, which had now joined, were told off to their squadrons. We see this clearly from the story of the Samothracian ship at Salamis, which fought in the Ionian fleet, but as epibatae carried Samothracian *ἀκοντισταί*, not Persians (8, 90). She was therefore no part of the Ionian fleet as originally organised; and it is indeed the whole point of the story that the Ionian good name was saved by the exploit of a ship which had nothing to do with Ionia. The same appears in the case of the ships of Naxos, Lemnos, and Tenos that deserted to the Greeks; had they carried Persian epibatae they could not have gone over, a point on which Themistocles had no delusions when he realised that 'strong necessity' might prevent the Ionians from deserting.⁶² I cannot help thinking that the seventeen *νησιῶται* of H. 7, 95, a figure and a contingent quite out of place where it occurs, represent the island reinforcements, but it is not very material.

If we take it then that the Persians lost 120 ships in the northern fleet, with perhaps fifteen captured and three wrecked on Myrmex, received a dozen or so reinforcements and lost a few in the storm, say twenty or thirty, I think we may put it this way: that at Aphetæ they cannot well have had *over* 450, and may of course have had a great many less. But I think that 450 as a highest possible is safe to work with: it will appear presently why I want to consider the outside possible figure.

§ 4.—*Artemisium*.

The Greek fleet the first day was 268 triremes (three lost scouting) and nine pentekontors. We have got to explain how it came about that the Greeks had rather the best of it against the superior Persian numbers.

One explanation has been suggested by Prof. Wilcken⁶³ in publishing the recently discovered fragment of Sosylos, viz., that this was the occasion on which Heraclides of Mylasa so brilliantly countered the Phoenician diecplus. F. Ruehl⁶⁴ has objected to this, that, if so, the total silence of Herodotus, who must have known of Scylax's narrative, is very extraordinary; and he suggests that Heraclides' feat belongs to some (unknown) battle of Artemisium in the Ionian revolt. To which Wilcken⁶⁵ replies that, if so,

⁶² H. 8, 22: *εἰ . . . ὅπ' ἀναγκῆς μέγιστος κατέσυχθε ἢ ὅστε ἀπίστασθαι.*

⁶³ *Hermes* 41 (1906), p. 103.

⁶⁴ *Philol.* 61, p. 352.

⁶⁵ *Hermes* 42 (1907), p. 512. But for the name Artemisium, it would fit in well enough

with the battle off Cyprus in H. 5, 112, in which the Ionians defeated the Phoenicians, for there must be something behind H.'s statement that that day the Ionians were 'at the top of their form,' *ἄκροι γινόμενοι*. Having learnt how to meet the diecplus, they then, before

the silence of Herodotus is still every bit as extraordinary, and that such a victory can hardly be fitted in with Herodotus' account of the Ionian revolt. I may remark, perhaps, that though, if the story comes from Scylax, we are in a difficulty either way, still there is no certainty that it does; Sosylos does not profess to be citing Scylax, neither does he suggest that the Massilian knew anything about Heraclides; he may be quoting some commonplace book of naval tactics, in which the manœuvre was of more importance than its correct attribution, the sort of book that we possess at fourth hand in the naval portions of Polyænus. And it does not do to forget that Polybius called Sosylos a mere chatterer. While reserving the possibility of Wilcken proving to be right, I do not see how we can use Sosylos for Artemisium till a good deal more light has been thrown on the matter, attractive as it would be to do so.

Putting Sosylos aside, I believe that Ephorus hit on the key to what happened when he described the Persians as issuing from different anchorages. Their four fleets were, as usual, at separate stations. The Greeks waited till late afternoon, and then attacked *one* of the fleets, the idea being to do what harm they could before the rest came up in support.⁵⁶ Hence the late afternoon, to give the Persian fleet, when combined, little time for operations. It was no *πεῖρα*; the strategical position compelled the Greeks to attack; they were only holding Thermopylae to enable the fleet, their best arm, to strike a severe blow, if so it might be.⁵⁷ The scheme answered pretty well; and on the other fleets coming up the Greeks managed to hold on till dark without receiving too much damage, retreating in convex line with their prows to the enemy and occasionally charging them.⁵⁸ The ships they took must have been taken *before* their retirement. From the reference to the capture of Philaon's ship we may suppose that the central fleet was the one they attacked; probably it lay nearest to the Greek position.⁵⁹

The next day the Greeks put out still later, attacked the central fleet

Lade, try to practise it themselves.—But though there were many Artemisiums and Dianiums all about the Mediterranean, I cannot find one in these particular waters, or nearer than the one in Caria which Ruchl gives.

⁵⁶ Welzhofer (*l.c.*), in his excellent study of Artemisium, came to much the same conclusion: the Greeks overwhelmed a portion of the Persian fleet before the rest came up. Ephorus perhaps had the same idea, but Diodorus does not actually say so, though he comes rather near it: 11, 12, τῶν δὲ βαρβάρων ἐκ πολλῶν λιμένων ἀναγομένων (before we have ἐκ πολλῶν καὶ διεστηκότων λιμένων), τὸ μὲν πρῶτον αἱ περὶ τὴν Θερμοπύλῃ διεσπαρμένοι τοῖς Πέρσῃς συμπλεκόμενοι πολλὰς μὲν ναῦς κατέδυσαν κ.τ.λ.

⁵⁷ This now seems a fixed point; Th. Lenschau, *Jahresb. über gr. Gesch.* 1904, p. 195. [Macan ii. 261 and 270.]

⁵⁸ By no means the same as the Corinthian tactics against Phormio in the gulf of Corinth. The line would probably become an arc, as they would be overlapped.

⁵⁹ [Dr. Macan's view is, that when the Persians rounded C. Sepias the Greeks were holding the Oreos channel, in case the enemy should try to force it; the Greeks did not attack the main Persian fleet as it made for Aphetae, but managed to cut off the rear-guard under Sandoces, capturing according to the Asiatic version fifteen ships, according to the Greek thirty; this was the first day of Artemisium. This is a wide departure from the tradition; nor do I see how ships of Paphos and of Caria could really be in one squadron. But I have already dealt with the Sandoces story, and cannot think that it has anything to do with the first day of the battle of Artemisium.]

again shortly before dark, and sank some of the Cilician ships. There was no time for the others to come up. Diodorus, who has possibly here got hold of a genuine bit of the lost Phoenician tradition,⁶⁰ makes Artemisium a two days' fight only; to the Phoenicians it was. The Greeks had this day been reinforced by fifty-three ships which had been guarding the Euripus.⁶¹ I have felt much difficulty over these fifty-three ships, because the number will not fit in with any possible squadron-arrangement,⁶² and of course the 200 Athenian ships had a definite squadron-arrangement: I conclude, however, that the story implies an Athenian squadron of fifty ships, and three others, not necessarily Athenian, sent to act as scouts.

It was evident that this sort of thing could not go on: the Persian fleet, against Persian policy (which was to strike with their best arm, the army), received definite orders to attack. The Greek numbers were now well over 300, the Persians not much over 400 at the very outside; the latter attacked in full force, and the Greeks got a very rough handling. No doubt it was a hard-fought day, and the Persians too suffered; but that it was a Persian victory there can be no doubt whatever. The real proof of this is the effect on the mind of Themistocles. He, who had previously been content that battle should be given in open water, now saw that it was life and death to the Greeks that the next fight should be fought in waters where the Persians could not manœuvre and had to come to close quarters; and he risked everything, his fair name included, to bring this about. Beside this, no other argument matters. Delbrück, for instance, lays stress on the Persian failure to pursue; but is there a single case in ancient history of a pursuit really pressed where the beaten fleet had a line of retreat and was not forced ashore? Rowers are not engines; also we do not know how far the Persian supply was disorganised by the storm, and we do know that it was their invariable policy that army and fleet should move strictly *pari passu*.

More to the point would be a query, why the Persian fleet, if really superior in numbers, did not do more damage than it did. The answer is to be sought in those limitations to which I referred above. Given equal courage, a lighter fleet that dare not either board or ram prow to prow could not make very rapid progress, one would think, whatever its skill.⁶³ Herodotus'

⁶⁰ I.e. that on both days the Sidonians did best. See § 9.

⁶¹ Bury in *B.S.A.* ii. 83.

⁶² A consideration quite neglected by those writers who seem to look on every number as suspect unless it be a surd. Given a town with a large fleet, this was bound, when at paper strength, to be an easily subdivided or round number. How far subdivision went we do not know: but there is an interesting story in Polyænus iii. 4, 2 of Phormio manœuvring a fleet in small squadrons of five ships each (*πεντατά*) as units; which shows (whether true of Phormio or not) that at a later time the

writers of the ordinary books on naval tactics were familiar with the idea of handling a fleet in small sub-squadrons.

⁶³ The glamour of Thucydides must not blind us to the fact that those tactics of manœuvre which we associate with Phormio and the fleets of Periclean Athens were always a failure in the long run. The power that adopted more robust methods of fighting, refusing to consider the sea as the monopoly of established skill and sea-power, invariably won. So the Athens of 480 beat the Persians; so Syracuse beat the Athens of 413; so Rome beat Carthage.

reference to the Egyptians as doing best on this day may be perfectly correct; their heavy-armed marines were not compelled to avoid a *πρὸμαχία*, as were the Persian archers. And Themistocles had the genius to grasp the Persian limitations for future use.

One last point on the third day of Artemisium. If some 400 triremes on one side were really engaged with over 300 on the other, then this was far and away the greatest sea-fight, as regards numbers of ships, ever fought in the ancient world. Taking a trireme as about 5 m. wide, with oars 3·3 m. out-board (Schmidt's calculation), we have a total breadth of about $12\frac{1}{2}$ yards. The rather common reckoning of 100 triremes in line abreast to a mile gives each vessel about $17\frac{1}{2}$ yards, which seems to me far too little, as it gives no possibility of turning; however, on this figure, and in double line, the Persian line of battle was at least two miles long; perhaps it was much longer. Two consequences follow, of importance when we come to consider the sources. Even in the absence of smoke, a man at one end of the line can have had little idea of what was happening to the bulk of the fleet; and, as a fact, the battle must have broken up into several independent actions. We see this happening clearly, to much smaller fleets, both at Ecnomus (Polybius) and at Salamis in Cyprus (Diodorus); most clearly of all at Chios (Polybius), which was really two separate battles.

§ 5.—*Salamis*.

The first thing is the Greek numbers. The 310 triremes of Aeschylus cannot well be wrong; he must have known the numbers of the fleet he fought in. Apart from Aeschylus, we can see that the 380 triremes of Herodotus are wrong for *Salamis*, as he presupposes that the larger contingents, Athens, Corinth, Megara, were in the same force as at Artemisium, which is absurd. I take it that Herodotus' figures are *campaign* totals, the sum total of the individual ships of each state commissioned during the summer of 480 B.C.⁶⁴

⁶⁴ Much of the criticism of these figures is rather perverse. Beloch's condemnation of them as round numbers, 180 Ath., 200 the rest, has been sufficiently met by Hauvette (*Hérodote*, 391-3), who pointed out, first that H.'s figure is not 380 but 378 plus two deserters (really 374 + 6 deserters, i.e. four Naxians included), and secondly that we cannot neglect the pente-kontois. I hope I have said enough already about round figures (n. 62); and no doubt Themistocles' aim was a fleet roughly equal in power to the rest of Greece. More elaborate is the criticism of R. Adam, *de Herodoti ratione historica*, which I cite because Delbrück seemed to think there was something in it (*G. d. Kriegskunst*, i. 12). By omitting the twenty ships lent to the Chalcidians—or rather manned

by Athenian kleruchs—Adam makes Athens furnish half the fleet, the other states half, including the deserters; next by omitting two of the deserters, he makes the Peloponnese furnish half of the latter half; and so on, ending in complete incoherence. This is supposed to prove that H. invented his figures on a scheme. We can all prove anything with any set of figures if we may juggle with them like this. I regret I have not been able to see Laird, *Studies in Herodotus*, who, I believe, holds that many of H.'s figures are mere calculations. If any reader will for a year or two keep count of the curious coincidences met with in the figures that he comes across in daily life, he will become very shy of rejecting figures as 'duplicates' or 'schemes.'

I accept that emendation of the lacuna which gives Aegina forty-two ships.⁶⁵

I take the Artemisium figures as correct : 325 triremes (of which 200 were Athenian and 1 a Lemnian deserter) and 9 pentekontors. It is obvious that Athens, Corinth, and Megara were bound to send their full fleets ; and the fact that the remaining northern state, Aegina (which was equally interested in sending its full contingent), is represented as *not* doing so adds considerably to one's sense of Herodotus' veracity. 200 is correct for Athens ; 100 built under Themistocles' law, and the other 100 made up of pre-existing ships and the later building mentioned by Herodotus.⁶⁶ The 20 lent to Chalcis were presumably manned by Athenian settlers. Meyer has shown that Athens could at this time have easily manned 180 triremes, allowing to each 150 rowers, 14 hoplites, and 4 archers ;⁶⁷ no doubt, too, the usual methods of manning the fleet were suspended, as before Arginusae,⁶⁸ and all men of military age, including the zeugites, had to serve if and so far as required. I may add that plenty of boys under 18 can pull an oar well enough.

No severely damaged ships could be repaired between Artemisium and Salamis. The reinforcements received were as follows, according to Herodotus : Lacedaemon 6, Sicyon 3, Epidauros 2, Hermione 3, Ambracia 7, Leucas 3, Aegina 24 (assuming 12 Aeginetan to fill the lacuna between the total of 378 and the addition of the several contingents), Cythnos 1, Croton 1, and 4 Naxian and 1 Tenian deserters ; total 55 triremes ; and 7 pentekontors against 9 at Artemisium, Locri with 7 having medised in the interval. Taking triremes only, 310 at Salamis less 55 reinforcements = 255, the total remaining after Artemisium. Total before Artemisium 325. Losses at Artemisium therefore 70 triremes, which is the difference between the Salamis total of Aeschylus and the campaign total of Herodotus. This may well be about correct. With losses proportionate to contingents, the Athenian loss would have been 43 ; but perhaps Pindar⁶⁹ is evidence that Athens bore the brunt of the fighting, and if so her loss could not well be under 50. We may perhaps say that Athens, including Chalcis, furnished some 150 ships at Salamis, nearly half the fleet.⁷⁰

We cannot well put the Persian loss at Artemisium lower than the Greek. If we call it also 70 (\pm), then, taking the highest possible figure before the battle as 450, we get somewhere about 380 (\pm) as a highest

⁶⁵ [Dr. Macan conjectures for Aegina 42 + 18 on guard at home = 60, which one would like to believe.]

⁶⁶ 7, 144 ; see W. Kolbe, *de Ath. re navali* (*Philol.* 58, 1899), p. 509, etc. I may add that 200 would be four times the number (50) furnished by the naucreries (with the Paralos and Salaminia) ; this squadron of fifty appears in H. 6, 89. If Prof. Bury be right about Aristides being *στρατηγός* at this time, with the command ashore (*Cl. Rev.* x. 414), it is tempting to suppose that at Artemisium each of the other

nine *στρατηγοί* commanded twenty ships, the remaining vessels, which should have been Aristides' command, going to Chalcis.

⁶⁷ *G. d. A.* iii. 358 ; *Forschungen* ii. 183.

⁶⁸ *Xen. Hell.* i. 6, 24.

⁶⁹ *Ap. Plut. Them.* 8 = *de gloria Ath.* § 7 = *de Herod. malig.* 34. Cf. H. 8, 18.

⁷⁰ I look on the 110 of Ctesias, which Beloch adopted, as absolutely worthless. It occurs, moreover, in a context where Ctesias is trying to belittle Athens.

possible for the Persian fleets as they entered Phalerum. Now Herodotus (8, 13) says of the storm, that it was sent by divine power to equalise the two fleets; this afterwards got turned ⁷¹ into a statement that at Salamis they *were* equal. It looks very much as if Herodotus' better source gave him a *number* for the Persians at Phalerum, and that number not far off the Greek total as he conceived it; and as if therefore one were right in working on the highest possible Persian number. But of course 380 (\pm) *may* be very considerably too high.

Happily I need not go into the vast literature relating to the topography of Salamis and the positions of the fleets; for it really bids fair to secure a definite result.⁷² There seems a pretty general agreement now that the old view of Leake and Grote, which Busolt adopted, viz., that the Persian fleet sailed in by night and took up a position along the Attic coast, is not only indefensible in itself, moon or no moon, but is not even Herodotus; and that what happened, as deduced from Aeschylus and confirmed by Herodotus, was that the Persians sent ships overnight to block the Megara channel, and that at dawn the rest of their fleet was drawn up from Cynosura to Munychia, outside (*i.e.* S. of) Psyttaleia. There is fortunately no need to support this conclusion by quoting later writers, though it does in fact agree with the deductions drawn by Ephorus. In order to get at what happened, I assume this result to be correct.

First, what ships were sent round Salamis? As the Ionians and Phoenicians were in the main battle, the choice lies between the central and Egyptian fleets.⁷³ We can, I think, see that it was the latter, though not because Ephorus says so. Of the four Persian admirals, Ariabignes was killed in the battle, and Prexaspes and Megabates superseded after it;⁷⁴ but Achaemenes was not superseded, as far as we know, for he was still satrap of Egypt at the time of Inarus' revolt (H. 3, 12; 7, 7). This can have had nothing to do with his being Xerxes' brother: that ruler was not over-tender of his brethren, as the story of Masistes shows. It is that for some reason a distinction was drawn between the Egyptian and the other fleets: the former was not included in the disgrace of the defeat.⁷⁵

When were the Egyptians sent off? Here comes in the really grave difficulty of the circumnavigation theory. Dr. Bauer, who supported the old

⁷¹ *E.g.* in Plutarch, *Them.* 15: τοῖς βαρβάροις ἐξισούμενοι τὸ πλῆθος.

⁷² References since Meyer: Raase, *op. cit.*, with full bibliography; F. Cauer reviewing Raase in *Woch. für klass. Phil.* 1905, no. 36 (a substantive contribution); Prof. W. W. Goodwin, *Battle of Salamis* (*Harvard Studies in Class. Philol.* vol. 17, 1906), p. 75, very full and giving a new explanation, after Lient. Rhediades of the Greek navy, of the *locus desperatus* τὸ πρὸς Ἐλευσίνος τε καὶ Ἰσπέρης κέρας, which Cauer thinks cannot be made sense of on any view.

⁷³ Aeschylus' reference to the main Persian battle as ἐν στοίχοις τρισὶν imports that three of the fleets were there; στοῖχοι, not 'lines,' but 'divisions', as Prof. Bury (*Hist.* i. 2 801) has taken it.

⁷⁴ See under Mycale, *post.*

⁷⁵ If Aeschylus bears on the question at all (see Goodwin, *l.c.*, p. 93) he only proves that the Egyptians were in action somewhere. Mardonius' speech (H. 8, 100) proves nothing at all; if it did, it would prove that the Ionian fleet was not in action. At best it is mere rhetoric.

view, brought forward the objection⁷⁶ against the circumnavigation of Salamis that, if the ships sent were not sent till after the receipt of Themistocles' message, there was no time for them to get round to Leros (Nera), and that if they merely reached the bay of Trupika their presence there would not have been sufficient. According to him, it is 53·5 kilom. from Piraeus round to Leros; and he relies on Xenophon's account of Alcibiades with 86 ships taking some 18 hours to do 50 kilom.⁷⁷ I feel the full force of this objection. So does Raase, who consequently halts the ships at the bay of Trupika. But I think Munro has shown that on the day of Salamis the Corinthians fought with the Egyptians;⁷⁸ and if so, the latter were more probably at Leros, for it is very unlikely that the Corinthians could get to the bay of Trupika, fight, and return ἐπ' ἐξεργασμένοις.⁷⁹ Anyhow, we must at least have a theory which will suit either event and not preclude the possibility of the Egyptian fleet blocking the strait at Leros.

We have therefore to count on the possibility of the Egyptians being sent off the preceding afternoon, before the arrival of Themistocles' message. But nothing, I suppose, is clearer now than that, but for Themistocles' message, there would have been no fight at all. Why then were they sent off?

I would suggest that what happened was somewhat as follows.

The Persian council of war was divided. One party, appearing in the tradition as Demaratus and Artemisia,⁸⁰ wished to ignore the Greek fleet and sail for the Isthmus, obviously the correct strategy. The other, represented in the tradition by the Phoenician kings and other naval leaders, wished to attack the enemies' fleet. The Phoenician leaders, who were really loyal to Persia, are hardly likely to have given such advice; they knew the disadvantages of a fight in the narrows; no doubt what they did was to profess a general readiness to fight the King's enemies at any time and anywhere.

⁷⁶ *Jahresh.* 4 (1901), p. 101. Repeated *Berl. Phil. Woch.* 1905, p. 158.

⁷⁷ Already commented on, n. 44.

⁷⁸ Favourably received: Lenschau, *l.c.*; H. Kallenberg, *Herodot.* in *Jahresh. d. Philol. Vereins in Berlin*, 1904, p. 248.

⁷⁹ No doubt the point reached by the Corinthians was the temple of Athene Skiras; but we do not know where it stood. Raase, *l.c.*, p. 33, has a useful list of the writers who think that the 'Egyptians' must have gone past Trupika to Leros.

⁸⁰ Demaratus' advice (H. 7, 236), given, be it noted, after Thermopylae, must belong here, *i.e.* after Artemisium. I take Artemisia's speech at the council (H. 8, 68) to mean the same thing. Parts of this speech must be genuine (so Welzhofer and Meyer); or, if not Artemisia's own, must at least represent the opinion of Halicarnassus. One sign of accuracy is the belittling of the central and Egyptian fleets, but *not* of that of the traditional enemy of the Asiatic Greeks, the Phoenicians; for a

contemporary would have seen the absurdity of running down the Phoenicians, however hated. Another is the amazing 'quotation' from Aeschylus: δειμαίνω μὴ ὁ ναυτικός στρατός κακῶθῃς τὸν πεζὸν προσδηλήσῃται = *Pers.* 728, ναυτικός στρατός κακῶθῃς πεζὸν ὥλεσε στρατόν. (I have not seen this 'quotation' noticed [not even by Dr. Macan], though *Plut. de malig. II.* 38 has some curious observations.) As H. was not really likely to make his heroine quote the best known, and least true, line of the *Persae*, we must suppose that Aeschylus himself was quoting a well-known saying; and as no one can have coined a phrase so remote from facts *after* the battle of Plataea, it may well have been a prophecy, traditionally attributed to Artemisia, though reflecting little credit on her judgment. It is true that the Scholiast on *Pers.* 728 interprets πεζὸν στρατόν as the troops on Psyttaleia; but the contexts are quite clear to show that neither Aesch. nor H. meant this for a moment.

Unfortunately for the fleet, Xerxes, or his staff, took half measures only.⁸¹ The army was sent off toward the Isthmus (H. 8, 71); and *one* fleet, the Egyptian, was sent to turn the Peloponnesian defences by occupying a harbour in the friendly Argolid.⁸² Doubtless the Egyptians were selected because their heavy-armed marines might be more useful for a brush ashore, when unsupported by cavalry, than Persian archers. Possibly too Achaemenes really opposed the scheme (H. 7, 236); and it would therefore appeal to a despot's sense of humour to select his command to carry it out. It was calculated that on the news the Greek fleet would break up, and the Persians could pick them up in detail; or if not, then that the main fleet could hold the Greeks in position long enough to give the Egyptians a sufficient start. On the afternoon before the battle, therefore, the Egyptians started; and the rest of the Persian fleet made its demonstration in force, to hold the attention of the Greeks.⁸³

The passing of the Egyptians was of course reported to the Greek admirals at Salamis. It might mean one of two things, according as their objective was the Argolid or Leros. But the mere possibility of the former raised (as the Persians intended) commotion in the minds of the Peloponnesian leaders: when Herodotus (8, 74) says they feared for the Peloponnesians and wanted to go home, he is literally correct. Themistocles therefore, on the fateful night, had to solve not one problem, but two. He had of course to induce the Persians to fight; but he also had to prevent the Peloponnesians from going off to defend their homes, precisely as Herodotus says. His message to Xerxes must have sounded to the King as follows: 'The Peloponnesians are going home; the Athenians are ready to medise;⁸⁴ block the straits and attack, and you can end the war in a blaze of spectacular glory.' Xerxes fell to the bait; a swift ship, or fire-signals, diverted the Egyptians; and at the critical moment Aristides, chased by them through the bay of Trupika,⁸⁵ was able to report to the council at Salamis that it was too late for anyone to go home.

The Persian fleet therefore, as it put out again in the darkness, must have expected anything rather than a battle. This seems to me to be the crucial point of the whole thing. The only possible explanation of that fleet fighting at all where and how it did is that Xerxes was completely taken in by Themistocles. The Persians must have expected a more or less complete Athenian surrender, and the mopping up of a few scattered detachments; and, says Aeschylus dryly, 'they were disappointed of their

⁸¹ Du Sein, *Histoire de la marine*, i. 110, suggested that the Persian action at Salamis must have been the result of a compromise.

⁸² The principal argument used by Delbrück and Meyer to show that the Persians were not stronger, or appreciably stronger, than the Greeks at Salamis, is that, if so, they must have divided their fleet and sent part to the Argolid. But suppose they did?

⁸³ I need not recapitulate the shifts to which

different writers have been put to account for the Persians drawing out their fleet the day before the battle. Of course Aeschylus does not mention it; but he is writing drama, not a diary.

⁸⁴ Munro, p. 331.

⁸⁵ So Raase. The arguments seem irresistible. It explains why the Tenian deserter, which of course came the other way, was required to confirm truthful Aristides.

expectation.'⁸⁶ It was not their numbers that hampered them—that is a Greek legend—but lack of sea-room. They had put themselves in a position where they could be, and were, brought to close quarters whether they would or no; Themistocles had won the battle before a blow was struck.

As to the battle. Herodotus is clearly right on three points: on the Persian right were the Phoenicians, Xerxes' command; on the Greek right the Spartans, Eurybiades'; and as Athens and Sparta could not be together, the Athenians formed the Greek left. We may therefore believe Herodotus, that the Ionians formed the Persian left. The other Dorians who were present, including Aegina, were of course with Sparta. Herodotus conceives of both lines as in two divisions only; no definite centre is mentioned on either side. The Ionians broke first (H. 8, 90), though the Phoenician accusation of treachery is groundless: strong necessity, as Themistocles called the Persian troops on board (H. 8, 22), saw to that. The battle then was decided by the Aeginetans breaking the Ionian line—hence their prize for valour—and taking the Phoenicians, who had perhaps successfully resisted the Athenian attack, in flank.⁸⁷ Athens may well have felt that to her had fallen the harder and less showy task; hence the later stories (not in Herodotus) which show jealousy of Aegina. The Phoenicians probably felt the same; they had held the Athenians, while the Ionians had broken before the Dorians. We have also got to remember that the Phoenician tradition is lost, that we have only the account of their bitter enemies, and that it is only the fair-mindedness of Herodotus *ὁ φιλοβάββαρος* which enables us to do any justice at all to that silent race. The discredited story of Xerxes beheading the Phoenician captains is absurd; a revolt in Phoenicia was the last thing that he could afford at the time; while the story of the Ionians being saved by the exploit of a Samothracian ship, which did not really belong to the Ionian fleet at all,⁸⁸ is part of the same impossible legend. If this last incident took place at all, it happened, like Artemisia's exploit, at the latter stage of the battle, when it had become, as Themistocles desired, a mere *mêlée*.

And the central fleet? It is not once mentioned. Whether, if the Persians entered in one column between Psyttaleia and Attica, it formed the tail of the column and never got into the bay; or whether, if the Persians entered in two columns, one on either side of Psyttaleia, it formed the centre and was crowded out, much as Hauvette supposed; or whether it was deliberately held in reserve, *οἱ ὀπισθε τεταγμένοι* of H. 8, 89, as is perhaps most likely, seeing that the Persians did not really expect a fight and that the waters were narrow: it is at any rate reasonably clear that it took no part in the battle.⁸⁹ If then the highest possible total for the

⁸⁶ *Pers.* 392, *γνώμης ἀποσφαλεῖσιν*.

⁸⁷ See Bury, *Hist.* i.² 302. [If the Persians were roughly on the line Aigaleos-Psyttaleia or Aigaleos-Cynosura (see n. 92), this would bring the Aeginetans across their line of retreat, and account for the story in H. 8, 91.]

⁸⁸ See p. 216.

⁸⁹ Mardonius' speech is no evidence, as I have pointed out above. All Herodotus' details refer to two fleets only, the Ionian and Phoenician; and the fact that after the battle

four Persian fleets at Phalerum be 380 (\pm), and allowing that the central fleet had suffered most at Artemisium, the total of the two Persian fleets actually in action in the main battle cannot have exceeded 200 and may well have been less. Even then if we allow that Adeimantus had a few ships with him besides the Corinthians, say some 50 all told, the Greeks had some 260 in the main battle; they therefore in the actual fighting thoroughly outnumbered their enemy. It appears therefore that on the point that matters we have come round, by a very different path, to a view rather similar to that of Delbrück. It also appears why I have tried to work with the highest possible Persian numbers.

Adeimantus, however, unlike the Athenians, really may have fought against odds, even supposing that the Egyptians' orders were merely to hold a line on the defensive and let no one pass. No wonder that Corinth hated Athens, especially as the accusation that Adeimantus would have run away if he could may, as we have seen, have contained just that amount of truth that makes a lie peculiarly bitter. It was hardly his fault if his heroism was partly due to circumstance.

The Persians, then, with a probable slight numerical superiority, contrived, by using half measures and by changing their plans at the bidding of Themistocles, to have a numerical inferiority at the decisive point, employed under conditions the worst possible for themselves. Bad generalship is hardly a strong enough term to use in such a connexion. To Aeschylus, the only explanation was a madness sent from heaven. The opinion of Themistocles on the point is not recorded.⁹⁰

One question remains, to my mind the worst of all the problems connected with Salamis, yet generally taken for granted: the Persians on Psyttaleia. If the Persians expected a hard fight, then, having regard to the constant desire of an ancient fleet to fight with its back to its land troops, one can see some sense in men being landed there; but the Persians did not expect such a fight—till it began. What men were they? Aeschylus speaks of them in terms that might fit the Persian general staff, at least. This no doubt is pure poetry. They were not land troops; the army had started for the Isthmus *before* Themistocles' message came, and could never have been recalled in time.⁹¹ Herodotus merely says, that on receipt of that

the Greeks, who seem never to have left the straits, expected Xerxes to attack again τῇσι περιούργοις νηυσὶ shows that part of the Persian fleet had not been engaged, as he could not attack again merely with the squadrons that had just been badly defeated. It is possible that the central fleet helped to embarrass the fugitives, 8, 89; but by that time the real battle was over. Even if we reckon in the central fleet, the Persian total, which cannot have exceeded 280, would be barely superior to the Greek total at the best, and may well have been very considerably inferior to it.

⁹⁰ In spite of his words in H. 8, 109 (spoken for a purpose), we might once well have doubted whether he himself did not consider a live Themistocles more useful than any number of dead ἥρωες. Yet we have lived to see the merit of another Salamis ascribed no less to the dead than to the living: rescript of the Emperor of Japan after Tsu-shima, 'The result is due in a large measure to the benign spirits of our ancestors as well as,' etc.—ἡρώσι συμμυχοῖσι.

⁹¹ I am assuming that the Persian land forces were strictly limited in number.



message the Persian admirals disembarked (*ἀπεβίβασαντο*) on Psyttaleia 'many of the Persians,' i.e. of the marines. Again (8, 130) he says that in the spring of 479 *most* of the Persian and Median marines were on board the fleet;⁹² i.e. some were not. The inference is, that it was part of the marines who were landed and killed on Psyttaleia. Yet it is incredible that an attacking fleet should have denuded itself of part of its chief weapon. The only explanation I can see is that the central fleet, held in reserve, and seeing that (contrary to expectation) it was indeed going to be a battle, landed part of its marines *after the fighting began*. In some way the central fleet was connected with the general Persian failure, as we know by the supersession of its admiral. But the whole thing is so difficult that one is sorely tempted to believe that it is all a mistake of our anti-Themistoclean tradition, and that the only contribution made that day by the just Aristides to the cause of Greek freedom was the butchery of a few shipwrecked crews.

The Persian loss cannot be estimated. It was enough to make the Persians resolve not to tempt fate again on the incomprehensible sea; but not very great, as the Greeks expected another attack.⁹³

⁹² [Dr. Macan thinks that H. only meant that the majority of the marines were Persians and Medes, and that an allusion to the original Medo-Persian epibatae 'would be far-fetched.' Why? It would be a natural enough allusion for any source which regarded the fleet as an organised force and not as a mob.]

⁹³ [Dr. Macan's theory of Salamis is, very briefly, as follows: The Persians, on the day before the battle, decide to blockade the Greeks in the bay of Salamis; they therefore send the Egyptians round to the Megara channel, the main fleet to the Psyttaleia end (this avoids the time difficulty for the Egyptians, and also accounts for the Peloponnesians wanting to go home, 8, 74, when they heard of the Egyptians passing, though Dr. Macan does not notice either point; it also accounts for the Persian fleet drawing out the day before the battle). On receipt of Themistocles' message they alter their first plan and sail in not expecting any battle (it will be seen that I agree with both these points). On the morning the Persians sail in in column of three lines (*ἐν στροφαῖς τριῶν*) between Psyttaleia and the mainland; the Athenians take the head of the column in flank and break it, deciding the action. The Persians on Psyttaleia were either landed during the action, or else belong to the first (abandoned) plan and were meant to invade Salamis.—While there is much to be said for this, I adhere to what I have written above, on the few points where I differ. (1) Dr. Macan admits that the Persians, if they meant to fight (first plan), were bound to try to get the

Greeks into open water; why then blockade them? A blockade would have given Themistocles just what he wanted: the Persians could not have avoided close quarters. (2) Even if Themistocles' message reached, not Xerxes (Aesch.), but the admirals (H.), it is clear that the latter could not change the whole plan without consulting their commander-in-chief, as the army and fleet were co-operating; the fleet then must have been back at Phalerum when the message arrived in the early part of the night, and put out (afresh) that night, as Aesch. says. Consequently, the movement of the fleet on the day before was a demonstration only; and what becomes of the blockade? (3) Dr. Macan has to treat the objective of the army as the Megara channel, to co-operate with the Egyptians. But, after all, H. says the Isthmus; let us keep what of tradition we can. (4) The battle *must*, I think, have been fought in line; Dr. Macan (ii. 315-6) cannot explain the Aeginetan *ἀπιστία*. No doubt the Persians entered in column, either one column or two; but (supposing now with Dr. Macan that it was one column) they could never have been caught in column by a fleet coming across from Salamis, when a mere half-turn by each ship would have brought them into line abreast facing the enemy; and we cannot press Aeschylus' *ρεῦμα* to prove the contrary. Two hundred triremes in column of two lines, 100 in each line, would cover about a mile from end to end; the whole column would be in the bay in six to seven minutes, or even less (Fincati's trireme did nine miles an hour, and the Phoenicians might



§ 6.—*Mycale*.

After Salamis, the Egyptian fleet handed over its marines to Mardonius (H. 9, 32) and went home.⁹⁴ In the spring of 479, what remained⁹⁵ of the other three fleets was at Samos, under three new admirals, Mardontes, Artayntes, Ithamitres; as only Ariabignes is recorded to have been killed, we see that the admirals of the central and Phoenician fleets had been superseded. Tigranes was at Mycale with land troops. The Persian commanders decided not to fight at sea; they therefore sent home the Phoenicians,⁹⁶ and no doubt the central fleet also, though this is not expressly mentioned. But the *στρατηγοί* of these two fleets disembarked the Persian marines before sending off the ships, and kept them with Tigranes;⁹⁷ this illustrates very clearly the fact that the Persian 'admiral' of a fleet was really only the general in command of the division of Persian troops acting as *ἐπιβαταί* on that fleet.⁹⁸ The Ionian fleet could not be sent home, the crews being disaffected; neither could it face the Greek fleet of 110 ships: its numbers by now must have been considerably less than 110. The ships were therefore drawn ashore; and in the ensuing land battle we find all four Persian *στρατηγοί*, i.e. the three admirals commanding the marines of the

do better than that for a short distance); by the time the Greeks had got under way, hesitated, backed water, and finally attacked, the enemy might have formed line abreast, roughly on the line Aigaleos-Psytaleia. No doubt, however, there was some confusion. (5) Psytaleia. We might suppose that the object of the 'blockade' was to throw a corps, behind and under shelter of the main Persian fleet, across into Salamis, capture the Greek base from the land side, and leave the Greek fleet in the air. But the tradition contains no hint of anything so exciting; and, if this were the plan, *why* land the troops on Psytaleia ?]

⁹⁴ This follows from the fact that its admiral Achaemenes, who was not superseded, was not at Samos (H. 8, 130), or at Mycale, or with Mardonius.

⁹⁵ H. gives 300 ships. This figure is of no use; like Mardonius' loss at Athos, it is so obviously one half of the whole.

⁹⁶ H. 9, 96. It has been pointed out by A. von Domaszewski, *Beiträge zur Gesch. d. Perserkriege* (*Neue Heidelberger Jahrbücher*, 1891), p. 187, that H. does not expressly say that the Phoenicians went home, and he has an attractive theory that the bulk of the Persian fleet, after Salamis, returned to the North Aegean to guard Mardonius' communications.

I am afraid that the presence of three admirals at Mycale disposes of this view; no fleet could keep the sea without its marines. Moreover, Leotychides could not possibly have sailed for Samos with a strong Persian fleet, unopposed, on his flank and rear; and we can hardly suppose that the Greeks had a *second* fleet at sea, plus the army at Plataea.

⁹⁷ This follows, as to the Phoenician fleet anyhow, from the *στρατηγός* remaining after the ships were sent off.

⁹⁸ Hence the fleet is a *στρατός* and its camp a *στρατόπεδον* (H. 7, 124, etc.). One is reminded of the fleets of the Roman Empire. Unfortunately we have no information as to the relations, on a Persian ship, of the triarch to the commander of the marines, that terrible crux of the later Roman fleet. Artemisia appears as mistress in her own ship: yet, though the marines were few compared with those on a Roman vessel, they were of an alien and dominant race. One would like to know how Darius solved the problem. The fact that Achaemenes, after landing his Egyptian marines, took his fleet home, may show that his position differed somewhat from that of the other *στρατηγοί*, and that he as a satrap was not merely a general of marines. But it might also mean that he shipped Persian troops in their place, with a view to possible disaffection in Egypt.



Ionian, central, and Phoenician fleets, and Tigranes.⁹⁹ It is hardly worth remarking that Leotychides must have known, before he sailed for Mycale with 110 ships, that all the Persian fleets but one had been sent home.

§ 7.—*Other Battles.*

It seems then that the numbers adopted in this paper fit in well with Herodotus' narrative. If they be correct, we can see that the figure of 600 Persian warships for the Scythian expedition,¹⁰⁰ Lade, and Marathon is mere transference; also that the various attempts made to deduce the Persian army at Marathon from the number of ships are waste paper. We can also, without going into the questions connected with the Ionian revolt, understand better two obscure statements in Herodotus' account. Hecataeus' advice to the Ionians to get command of the sea becomes practical; had they secured all of Greek blood they would have had about two and a half of the five fleets (counting the Carians as with them), and the temple treasures of Didyma would have done the rest. And the nervousness of the Persian commanders before Lade is based on the fact that they were very likely outnumbered; they had the Phoenician, Egyptian, and central fleets, *i.e.* 360 less their previous losses, and with the Cypriotes still untrustworthy, possibly much less than 300 effective ships; the Greeks, who had manned every craft that would float, should have had 300 anyhow.

The battle of the Eurymedon, too, falls into its proper place. The success of Cimon's operations consisted in this, that he succeeded in preventing the junction of the Phoenician and central fleets, capturing the latter, 100 (\pm) strong, at the Eurymedon, and the Phoenician (80 ships) in Cyprus later.¹⁰¹ Thucydides' figure, 200 'Phoenician,' *i.e.* Persian, ships, then refers to the *campaign*, the 100 of all later writers to the actual day of the double battle. These numbers alone ought to be conclusive against the popular exaggeration of the numbers of Xerxes' fleet.

§ 8.—*The Divisional Numbers.*

The question, however, remains, *why* 120? As we do not suppose that Darius took 600 as a likely number, cut his coast-line into five sections, and divided 600 by five, we must conclude that 600 grew up round a nucleus of a

⁹⁹ Taking the 110 Greek ships at 150 rowers and 18 marines, they could land some 18,000 troops of all sorts. If we take each of the three Persian fleets at say 80 ships (they can hardly have been stronger by now) we get, at 20 marines per ship, 4,800 troops, or say 4,000, for some were not there (H. 8, 130). Tigranes had what remained of his army corps, perhaps originally 10,000 (ii. 27; not 60,000, as H. says), and the Persians were encumbered by

some 12,000 armed and disaffected Ionian rowers. The extreme weakness of their position is apparent.

¹⁰⁰ Hauvette, *l.c.* 195, has shown that H. did *not* get his figure here from Darius' stelai on the Bosphorus.

¹⁰¹ See Meyer's reconstruction of the narrative of Callisthenes of Olynthus in his *Forschungen*, ii. pp. 1 *seq.*, *Die Schlacht am Eurymedon*.



fleet of 120 furnished by a district of roughly one-fifth of the power of the whole, in this case undoubtedly Phoenicia. That is to say, the number that Phoenicia engaged to furnish was reckoned on the sexagesimal and not on the decimal system, and was obviously two divisions of sixty ships each. The coins appear to show that the sexagesimal system only obtained a partial footing in Phoenicia, notwithstanding its grasp upon Western Asia generally;¹⁰² and it may be that, as some have supposed, the engagements of Phoenicia to Cyrus merely repeated her former engagements to Babylon. Be this as it may, the hypothesis of a Phoenician naval organisation in divisions of sixty can be checked. For there was another navy which inherited the tactics¹⁰³ and traditions of that of its mother-land; and if this hypothesis be correct, we ought to find that the Carthaginian navy was organised upon a sexagesimal system. We do.

We get at Carthage the following set of figures:¹⁰⁴ Alalia ⁵³⁵542 B.C. 60 ships; 480 B.C., 200 (doubtless too high); 409 B.C., 60; 406 B.C., 120; against Dionysius I. and again against Timoleon, 200. In 311/10 B.C., against Agathocles, 130 (Diod. 19, 106, 2); sent to Rome as a help against Pyrrhus either 120 (Justin 18, 1, 2) or 130 (Val. Max. 3, 7, 10); 278 B.C., probably 130;¹⁰⁵ at the opening of the first Punic war, 130 (Polyb. 1, 23). I have, I hope, shown that in the wars with Rome 200 ships meant a supreme Carthaginian effort.

Now in 480 B.C. a battle fleet did its own scouting (above, p. 209). But by 260 B.C. a fleet was accompanied by regular scouts. The Romans, who were copying Carthage, used lembi for this purpose;¹⁰⁶ whether the Carthaginians used lembi or triremes or what not is immaterial so long as they did use scouts. We see then that the Carthaginian navy works out as follows. In 542 B.C. and 409 B.C. it consisted of one division of 60; in 406 B.C. of two such divisions; in 311 B.C. its two divisions had become 65 ships apiece, *i.e.* 60 ships of the line plus 5 scouts (Justin omits the scouts) and so remained till after the shock of Mylae. In time of great stress a third division was mobilised. The figures of 200 ships in the fourth century *might* be round figures; but for the Punic wars they are exact, the third division consisting of 70 ships, *i.e.* 60 plus 5 scouts plus an extra 5 ships, either fleet scouts or reserve ships. We have an express mention of this third division in Polybius (1, 53, 2); after Drepana, where Adherbal had probably something under 123 ships (two weak divisions), Carthalo reinforced him with 70 ships. I may also refer to Polybius' account of Ecnomus, where the Carthaginian fleet is in three divisions, against the four divisions of the Roman.¹⁰⁷

¹⁰² For recent discussions of this system see F. K. Ginzel in *Klio*, vol. i. pp. 349-380, and C. F. Lehmann-Haupt in ditto, pp. 381-400.

¹⁰³ Sosylos is at least evidence for this much, when, in referring to the Carthaginian navy, which he knew, he says that the *Phoenicians* always do so and so.

¹⁰⁴ I am indebted here to the chapter on the

Carthaginian navy in Meltzer, *Gesch. d. Karthager*, vol. ii.; and for what follows I refer once for all to my paper in *J.H.S.* xxvii. (1907), 48.

¹⁰⁵ This is only a combination (Meltzer, ii. 234), but a good one.

¹⁰⁶ Polyb. 1, 53, 9.

¹⁰⁷ My conclusion (*J.H.S.* xxvii. 57), that the (successful) object of Rome in the first Punic



In the second Punic war, the Carthaginian figures are at first irregular and small, Carthage undertaking raids with small squadrons only; but in 215 they mobilised their two divisions, given as sixty each (Livy, as not infrequently, omitting the scouts), consequent upon the intervention of Philip in the war; and they again and for the last time, in 212, mobilised two divisions, given as 130, in a vain effort to save Syracuse (Liv. 25, 27). (The fleet of Spain was separate.) After this, the figures represent what they *could*, not what they *would*.

We are, I think, entitled to look upon it as a fact, that the division of sixty ships of the line formed the basis of the Carthaginian naval organisation; and it can hardly be a coincidence that a similar arrangement of the Persian fleet, arrived at merely by following out Herodotus, is supported by Carthaginian figures partly expressly given in the tradition and partly arrived at merely by following out Polybius without a thought of such a thing as the sexagesimal system.¹⁰⁸

§ 9.—Sources.

It remains to consider, very briefly, some points about the sources. We have traced a thread of what looks like accurate information running through Herodotus' narrative of the Persian fleet. The number 120 for the northern fleet, the number 600 for the whole, the four admirals at Doriscus, Xerxes' personal command of the Phoenicians, the separation of the several fleets at Therme and on the voyage down the Magnesian coast, the storm falling on them so separated, the loss of the northern fleet, the small storm-damage otherwise, the late attack on the first two days of Artemisium, the Persian demonstration the day before Salamis, the number of Artemisia's squadron, the Persian number at Salamis (this last doubtful)—these are some of the points we have seen reason to think accurate, apart from matters such as the general arrangements at Salamis, which I omit as having been fully thrashed out by

war was to keep afloat a fleet of 20–40 ships more than Carthage, ought to be expressed differently. They aimed at maintaining four divisions to the Carthaginian three. These divisions were not necessarily of the same strength as the Carthaginian, but there is little evidence for the strength of a Roman division in the first Punic war, and possibly it was not constant.

¹⁰⁸ In case anyone should think the whole question of these divisions fanciful, I append a few figures from the Roman navy, taken from the mass of material in Livy, Polybius, and Appian. From 218 to 214 a Roman division (as in the first Punic war) fluctuated between 60, 55, and 50. In 214 Rome answered the Carthaginian mobilisation of 215 with a decree for a (standing) fleet of 150 quinqueremes in home waters (Livy 24, 9), and henceforth the

Roman division was 50 ships of the line. The two standing fleets from 214 to 206 were, Sicily 100, Adriatic 50. In 208 two additional special squadrons of 50 quinqueremes each were formed for Italy and Sardinia. After 206 Rome laid up ships fast, and the figures fall. War against Philip (193): 100 *tectae*, 50 *apertae* (probably allies), and *lembi* (Liv. 32, 21). Against Antiochus, first 100, then 50, quinqueremes ordered; not all built; at sea in 191, one division (50) under Livius, with a half-division (25) taken over from Atilius, and allies (Liv. 36, 41). Against Persens, 50 quinqueremes ordered (Liv. 42, 27). Against Carthage in the last war (App. Lib. 75), 50 quinqueremes, and allies. A complete analysis of the second Punic war is really conclusive. Livy omits the scouts from the divisions, or gives them separately, as being generally allies.



others. On the other hand, we have found two stories that stand on a different footing; the number 1,207 for the Persian triremes, with the concomitants of this number, such as a heavy storm-loss and the overcrowding of the Persian ships at Salamis; and the story of the Sepiad strand, with its accompanying incidents, also including a heavy storm-loss.

Now this last is pure poetry. If the difficulty of date can be overcome, one would be inclined to assign it to Choerilus of Samos,¹⁰⁹ though I have not the qualifications for determining this; the fact that Herodotus in this connexion gives the story of Boreas and Oreithyia, which occurred also in Choerilus,¹¹⁰ is strong, as Mülher pointed out. I have already given my reasons for thinking that the story of the Sepiad strand, whether from Choerilus or some other poet, is ultimately taken from Homer.

The figure 1,207 does not, I think, come from any definite source at all: certainly it must be a *Greek* figure, and would hardly come from Dionysius of Miletus¹¹¹ or any other Asiatic Greek, who must have known the facts. I take the genesis of this number to have been somewhat as follows. The original total at Athens for Xerxes' armada was the round 1,000, including triremes both ordinary and *ταχῆλαι* and supply ships; this was accurate enough. The next step was 1,000 *warships*, including *ταχῆλαι*¹¹² (Aeschylus), but excluding supply; then 1,000 *warships*, excluding the 207 *ταχῆλαι*, = 1,207 *warships* (Herodotus). Meanwhile supply, separated from the *warships*, grew at pleasure, and is still fluid in Herodotus, as we see by the 3,000 'triakontors, pentekontors, cercuri, and horse transports' of 7, 97, which in 7, 184 become 3,000 pentekontors, with crews calculated accordingly. All this is the mere talk, or self-glorification, of the man in the street at Athens.

To turn now to Herodotus' more accurate information. No doubt a good deal of this—the numbers 120 and 600, Xerxes' command and organisation generally, the arrangements before Salamis—was known to and may well be derived from either Demaratos or more probably Megabyzos.¹¹³ But this cannot apply to that part of the story of the fleet that lies between its departure from Therme and its arrival at Phalerum; for here army and fleet were separated throughout. Consequently we get the striking, but I think unnoticed, phenomenon that at Salamis we are (more or less) in the Persian councils, while at Artemisium we are not;¹¹⁴ we do not know what the Persian headquarters were about in that three days' fighting. Herodotus' informant, then, as to the voyage down the Magnesian coast, and Artemisium, was not in the councils of the leaders; but the voyage shows clearly that he was with the fleet. As the details of the *mêlée* at Salamis are all given from the point of view of the Ionian fleet; and

¹⁰⁹ See D. Mülher in *Klio*, 7, 29, already cited.

¹¹⁰ Frag. 5 in Kinkel, *Epic. Græc. fragmenta*. Also Choerilus in *Pauly-Wissowa* (Bethe)

¹¹¹ As C. F. Lehmann-Haupt in *Klio*, 2, 338, n. 2.

¹¹² What Aeschylus' unlikely figure of 207

for these means can hardly perhaps be ascertained. It may relate to something else and have got transferred.

¹¹³ Mr. J. Wells, *The Persian Friends of Herodotus* (J.H.S. xxvii. 1907, p. 37).

¹¹⁴ The speeches of Demaratos and Achæmenes belong *after* the battle.

as the precise information as to the number of Artemisia's ships, and her conduct, can only have been of interest to, or derived from, Halicarnassians; it is easiest to suppose that Herodotus' ultimate source for the actions of the Persian fleet between Therme and Phalerum was not merely Ionian, but was someone in the Halicarnassian squadron, perhaps on Artemisia's own ship.¹¹⁵ And this is not rendered unlikely by his very scanty information as to Artemisium. Artemisia says that she fought bravely in this battle (and we may grant that if the lady was in action at all the adverb is superfluous); but the Ionian fleet may (as we have seen) have only got into action very late on the first day; on the second day it probably was not engaged at all; while as to the great battle of the third day, I have already tried to show that no one ship could have known much of what was going on except in its own immediate neighbourhood. Herodotus may well have despaired of any attempt to describe the third day, when he laments that he could not even get information about the confined fight at Salamis.

One word as to Diodorus. It seems to me unlikely that anyone, who tries to understand the naval operations of 480 B.C., should accept the ordinary view that the Diodorus-Ephorus narrative is a mere working up of, or deduction from, that of Herodotus (I refer to the naval portions only).¹¹⁶ The fact is, that, with much rubbish, Diodorus (or Ephorus) is in some important respects the more understanding of the two; and on one matter, the Egyptians at Salamis, the world has been forced to come round to what he says. The best instance is the first day of Artemisium; here, although on the question who attacked Herodotus is right and Diodorus is wrong, still on the actual fight Diodorus writes clear sense (though not the whole sense), while Herodotus is conscientiously groping about. Now it is perfectly possible to deduce Diodorus' account of this day from that of Herodotus and from general tactical and other considerations, except on one point, viz., the ἀριστεία of the Sidonians on both days of the battle; and this last may be a mere guess in the dark, based on the general reputation of the Sidonians in Herodotus. All this is possible; still, the common sense of the matter is, that Diodorus on the first day of Artemisium, and perhaps elsewhere, may represent, however imperfectly, a better tradition than that of Herodotus. And if the information of Herodotus here (where not Greek) be Halicarnassian, or otherwise drawn from the Ionian fleet, a better tradition could, as I have already hinted, be derived ultimately from one source only, the version preserved by the Phoenicians. Have we here, in Ephorus, some echo from that association of Athens and Phoenicia which culminated in a Phoenician fleet under Conon

¹¹⁵ The information may have only reached H. at second or third hand, of course. It need not, either, have been exclusively Halicarnassian; he has some Samian details about Salamis, which, however, Mûlder (*l.c.*) attributes also to Choerilus.

¹¹⁶ Cf. Polyb. 12, 25^f, of Ephorus, ἐν τοῖς πολεμικοῖς τῶν μὲν κατὰ θάλατταν ἔργων ἐπὶ

πρὸς τὴν ὑπὸ νῆον ἐσχηκέναι μοι δοκεῖ, with illustrations. This is pared away by Schwartz in *Pauly-Wissowa s.v. Ephoros* (vi. i. 11). But I think we may agree with A. von Meiss, *l.c.* p. 406, that the question of Ephorus' sources for this period is more complex than is usually supposed.

restoring the Long Walls of its erstwhile rival? Be this as it may, it has a very definite bearing on the important fact that Diodorus does give 120 as the number of the northern fleet.¹¹⁷ Whether Ephorus is likely to have deduced this figure from Herodotus, as is done in this paper, I must leave to my readers to answer.

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¹¹⁷ It is always possible that the number of the northern fleet was preserved in the traditions of Cyme, and that Ephorus, with his known local patriotism, adopted that tradition. This would explain his radical divergence from Herodotus over the *one* fleet.